CLAIMS

1. Apparatus for identifying objects, comprising:

a multiplicity of tags, each such tag being adapted to be fixed to a respective one of the objects and comprising:

at least one optical emitter, which is adapted to emit optical radiation of a respective color, selected from among a first plurality of colors emittable by the tags; and

a controller, which is coupled to drive the at least one optical emitter to emit the optical radiation during a respective time slot, selected from among a second plurality of time slots during which the tags may emit the optical radiation;

at least one camera, which is adapted to capture a sequence of electronic images of an area containing the objects to which the tags are fixed; and

an image processor, which is adapted to process the electronic images in the sequence in order to identify, responsively to the colors of the optical radiation emitted by the tags and the time slots in which the optical radiation is emitted, the objects to which the tags are fixed.

2. The apparatus according to claim 1, wherein for each of at least some of the tags, the at least one optical emitter comprises at least first and second optical emitters of different, first and second colors, and wherein the controller is configurable to select one of the first and second colors to be emitted by the tag.

3. The apparatus according to claim 1 or 2, wherein the tags are configured so that no more than one of the tags emits any one of the colors during any of the time slots.

4. The apparatus according to any of the preceding claims, wherein the controller is adapted to receive a synchronization input and to synchronize the respective time slot responsively to the synchronization input, so that all the tags are in mutual synchronization.

5. The apparatus according to claim 4, and comprising a synchronization transmitter, which is adapted to transmit a synchronization signal over the air in the area containing the objects, wherein each of the tags comprises a synchronization module, which is coupled to receive the synchronization signal and responsively thereto, to generate the synchronization input to the controller.

6. The apparatus according to claim 5, wherein the synchronization signal comprises a radio frequency (RF) signal.

7. The apparatus according to any of the preceding claims, wherein the at least one optical emitter comprises at least one light-emitting diode (LED).

8. The apparatus according to any of the preceding claims, wherein the image processor is further adapted to process the electronic images in the sequence in order to determine, responsively to the colors of the optical radiation emitted by the tags and the time slots in which the optical radiation is emitted, location coordinates of the objects.

9. The apparatus according to claim 8, and comprising a memory, coupled to the image processor, which is adapted to create a location database in the memory, containing records of motion of the objects in the area, based on the location coordinates determined by the image processor.

10. The apparatus according to claim 9, wherein the objects comprise animals.

11. A method for identifying objects, comprising:

fixing tags to respective objects, each such tag comprising at least one optical emitter;

driving the at least one optical emitter on each of the tags to emit optical radiation of a respective color, selected from among a first plurality of colors emittable by the tags, during a respective time slot, selected from among a second plurality of time slots during which the tags may emit the optical radiation;

capturing a sequence of electronic images of an area containing the objects to which the tags are fixed; and

processing the electronic images in the sequence in order to identify, responsively to the colors of the optical radiation emitted by the tags and the time slots in which the optical radiation is emitted, the objects to which the tags are fixed.

12. The method according to claim 11, wherein driving the at least one optical emitter comprises selecting one of at least first and second optical emitters of different, first and second colors provided on the tag, and driving the selected one of the emitters to emit the optical radiation.

13. The method according to claim 11 or 12, wherein driving the at least one optical emitter comprises configuring the tags so that no more than one of the tags emits any one of the colors during any of the time slots.

14. The method according to any of claims 11-13, wherein driving the at least one optical emitter comprises synchronizing all the tags responsively to a common synchronization input.

15. The method according to claim 14, wherein synchronizing all the tags comprises transmitting a synchronization signal over the air in the area containing the objects, and synchronizing each of the tags responsively to the synchronization signal.

16. The method according to claim 15, wherein the synchronization signal comprises a radio frequency (RF) signal.

17. The method according to claim 15, wherein the synchronization signal comprises an infrared (IR) signal.

18. The method according to any of claims 11-17, wherein the at least one optical emitter comprises at least one light-emitting diode (LED).

19. The method according to any of claims 11-18, and comprising processing the electronic images in the sequence in order to determine, responsively to the colors of the optical radiation emitted by the tags and the time slots in which the optical radiation is emitted, location coordinates of the tags.

20. The method according to claim 19, and comprising creating records of motion of the objects in the area, based on the location coordinates.

21. The method according to claim 20, wherein the objects comprise animals.